

**IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

CELLULAR COMMUNICATIONS)	
EQUIPMENT LLC,)	
)	Case No. 2:15-cv-0576-RWS-RSP
Plaintiff,)	(Lead Case)
)	
v.)	
)	JURY TRIAL DEMANDED
AT&T, INC., ET AL.,)	
)	
Defendants.)	
)	
)	
)	

PLAINTIFF’S OPENING CLAIM CONSTRUCTION BRIEF

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<u>Exhibit</u>	<u>Description</u>
Exhibit A	U.S. Patent No. 8,457,022 (“the ’022 patent”)
Exhibit B	U.S. Patent No. 8,570,957 (“the ’957 patent”)
Exhibit C	U.S. Patent No. 8,867,472 (“the ’472 patent”)
Exhibit D	U.S. Patent No. 8,457,676 (“the ’676 patent”)
Exhibit E	U.S. Patent No. 9,025,590 (“the ’590 patent”)
Exhibit F	U.S. Patent No. 9,078,262 (“the ’262 patent”)
Exhibit G	U.S. Patent No. 8,457,022 File History (“’022 patent FH”)
Exhibit H	U.S. Patent No. 8,570,957 File History (“’957 patent FH”)
Exhibit I	U.S. Patent No. 9,078,262 File History (“’262 patent FH”)

I. INTRODUCTION

Pursuant to P.R. 4-5(a) and the Court’s Amended Docket Control Order of July 25, 2016 (Dkt. No. 201), Plaintiff Cellular Communications Equipment LLC (“Plaintiff” or “CCE”) hereby files its Opening Claim Construction Brief. CCE asserts six United States patents in this lawsuit: U.S. Patent No. 8,457,022 (“the ’022 patent”), U.S. Patent No. 8,570,957 (“the ’957 patent”), U.S. Patent No. 8,867,472 (“the ’472 patent”), U.S. Patent No. 8,457,676 (“the ’676 patent”), U.S. Patent No. 9,025,590 (“the ’590 patent”), and U.S. Patent No. 9,078,262 (“the ’262 patent”) (collectively, the “patents-in-suit”).

The patents-in-suit are part of a broader portfolio acquired from Nokia Siemens Networks (“NSN”) and generally relate to mobile communications. The ’022, ’957, ’472, ’676, ’590 and ’262 Patents have been declared potentially essential to practicing LTE wireless standards, and cover aspects of implementation and use of those technologies. The accused infringing products are mobile devices (i.e., user equipment), including cellular phones, tablets, and wireless cards, and base station products (i.e., network equipment).¹

There are twenty claim terms disputed. The parties have agreed to the construction of two claim terms. *See* Dkt. No. 209. Of the twenty disputed claim terms, Defendants have offered a construction for only *one* term. The other nineteen concern indefiniteness allegations. Of those nineteen terms, twelve require a threshold determination as to whether they are governed by 35 U.S.C. § 112 ¶ 6. Those twelve terms will be addressed in this opening brief. The construction of the other eight terms under dispute will also be addressed. But because Defendants bear the burden of proving that a claim is indefinite, CCE will respond to Defendants’ allegations of indefiniteness in its reply claim construction brief. *See* Dkt. No. 201.

¹ The ’590 and ’262 Patents are not asserted against mobile devices and therefore are not asserted against Defendants Apple, HTC, and ZTE.

As will be shown throughout this brief in detail, Defendants’ proposed claim construction positions are each plagued with one or more of the following flaws: (1) Defendants improperly limit the scope of claim terms by impermissibly injecting limitations that are inconsistent with the plain meaning; (2) Defendants argue hyper-technical readings of claim terms to argue indefiniteness, rather than relying on the abilities of a person of ordinary skill to apply the unambiguous plain meaning; and (3) Defendants seek to improperly stretch § 112 ¶ 6 to apply where it shouldn’t, and thereby argue that well-understood claim terms with significant structure are indefinite. Because these flaws permeate Defendants’ positions, they should be rejected.

II. APPLICABLE LAW

A. A Claim Should Be Given The Full Range of Its Ordinary Meaning.

The claims of a patent “define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (citation omitted). Consequently, “[c]laim construction begins with the language of the claim.” *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1360 (Fed. Cir. 2013). Claim terms generally receive their ordinary and customary meaning, which is the meaning that a person of ordinary skill in the art would have understood the claim term to have as of the filing date of the patent application. *Phillips*, 415 F.3d at 1313. “[U]nless compelled to do otherwise, a court will give a claim term the full range of its ordinary meaning as understood by an artisan of ordinary skill.” *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001).

There are “only two exceptions to [the] general rule” that claim terms are construed according to their plain and ordinary meaning: “1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of the claim term either in the specification or during prosecution.” *Golden Bridge Tech., Inc. v. Apple Inc.*, 758 F.3d 1362, 1365 (Fed. Cir. 2014) (quoting *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365

(Fed. Cir. 2012)); *see also GE Lighting Solutions, LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) (“[T]he specification and prosecution history only compel departure from the plain meaning in two instances: lexicography and disavowal.”). The standards for finding lexicography or disavowal are “exacting.” *GE Lighting Solutions*, 750 F.3d at 1309.

To act as his own lexicographer, the patentee must “clearly set forth a definition of the disputed claim term,” and “clearly express an intent to define the term.” *Id.* (quoting *Thorner*, 669 F.3d at 1365). The patentee's lexicography must appear “with reasonable clarity, deliberateness, and precision.” *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998). To disavow or disclaim the full scope of a claim term, the patentee's statements in the specification or prosecution history must amount to a “clear and unmistakable” surrender. *Cordis Corp. v. Boston Sci. Corp.*, 561 F.3d 1319, 1329 (Fed. Cir. 2009).

B. A Claim Should Be Construed In Light of the Specification, Without Reading Limitations into the Claims.

Notwithstanding the primacy of the claim language, courts interpret claim language “in light of the intrinsic evidence of record, including the written description, the drawings, and the prosecution history.” *Power Integrations*, 711 F.3d at 1360 (citation omitted). The specification can be useful, for example, to “determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning.” *Vitronics Corp. v. Conceptronic*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Additionally, “[i]diosyncratic language, highly technical terms, or terms coined by the inventor are best understood by reference to the specification.” *3M Innovation Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1321 (Fed. Cir. 2013). Although the specification can be a useful guide to how the inventor used a disputed term, “limitations discussed in the specification may not be read into the claims.” *Id.*; *see also Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009). Indeed, the Federal Circuit has repeatedly held that courts may not import

limitations from embodiments disclosed in the specification in order to limit or otherwise vary the meaning of the claim language. *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 905-06 (Fed. Cir. 2004); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327-28 (Fed. Cir. 2002); *Inverness Med. Switzerland GmbH v. Warner Lambert Co.*, 309 F.3d 1373, 1379 (Fed. Cir. 2002) (“It is improper to limit the claim based on a preferred embodiment of the invention.”).

Extrinsic evidence, such as technical dictionaries, may “help educate the court regarding the field of the invention and can help the court determine what a person of ordinary skill in the art would understand claim terms to mean,” but such evidence should be considered in the context of the intrinsic record. *Phillips*, 415 F.3d at 1319. Extrinsic evidence cannot be used to “vary, contradict, expand, or limit the claim language from how it is defined, even by implication, in the specification or file history.” *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Grp., Inc.*, 262 F.3d 1258, 1269 (Fed. Cir. 2001).

C. 35 U.S.C. § 112 ¶ 6 Does Not Apply if There Is Sufficient Structure Within the Claim Itself to Perform the Recited Function.

Under 35 U.S.C. § 112 ¶ 6, a patentee may elect to express a claim limitation as a means for performing a specified function, without reciting a particular structure. *See Inventio AG v. Thyssenkrupp Elevator Ams.*, 649 F.3d 1350, 1355-56 (Fed. Cir. 2011). Such elements are construed to cover the corresponding structure clearly linked or associated with the claimed function in the specification or file history, and equivalents of those structures. *Med Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1219 (Fed. Cir. 2003).

Use of the word “means” creates a presumption that § 112, ¶ 6 applies. *Personalized Media Commc’ns, LLC v. Int’l Trade Comm’n*, 161 F.3d 696, 703 (Fed. Cir. 1998). Conversely, “the failure to use the word ‘means’ creates a presumption that § 112, ¶ 6 does not apply.” *Id.* at 703–04; *see also Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc).

“[W]hen a claim term lacks the word ‘means,’ the presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1348 (citations omitted). Where a claim recites a function, but also provides “sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format.” *Personalized Media*, 161 F.3d at 704.

When it applies, § 112, ¶ 6 limits the scope of the functional term “to only the structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof.” *Williamson*, 792 F.3d at 1347. Construing a means-plus-function limitation involves two steps. “The first step . . . is a determination of the function of the means-plus-function limitation.” *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001). “[T]he next step is to determine the corresponding structure disclosed in the specification and equivalents thereof.” *Id.* This step cannot include “incorporation of structure from the written description beyond that necessary to perform the claimed function.” *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999).

III. DISPUTED TERMS AND PHRASES

A. Terms Having Disputed Constructions or Alleged To Be Indefinite.

1. “radio network resources” (’957 patent, claims 4, 10)

CCE’s Construction	Defendants’ Construction
No construction necessary. Alternatively: “resources of a radio network that can be allocated, managed, scheduled, and/or assigned”	“resource blocks”

The term “radio network resources” does not require construction. Defendants seek to substantially limit the term “radio network resources” beyond the plain meaning of the term and

beyond the embodiments disclosed by the '957 patent. The Court should reject this attempt to limit the claims to a singular embodiment of the invention. *See Inverness*, 309 F.3d at 1379.

The term “radio network resources” is well-understood by a person of ordinary skill in the art to be any available resource in a radio network that can, for example, be allocated, managed, scheduled, or assigned. This understanding is further informed by the surrounding claim language of claims 4 and 10 of the '957 patent. In both claims (as well as in claims 14 and 16) the term “radio network resources” is used similarly: “allocating radio network resources based on the power headroom report,” “allocating additional radio network resources to a user equipment when the power headroom indicates positive headroom,” and “allocate fewer radio network resources to the user equipment when the power headroom report indicates negative headroom.” Thus, the claim language does not limit the “radio network resource” to any specific resource. Based on the claim language, the “radio network resource” must be allocable to a user equipment in either a greater or lesser amount. But nothing in the claim language supports Defendants’ proposed narrowing of the term to “resource blocks.”

The '957 patent specification provides examples of the radio network resources beyond just resource blocks. One aspect of the invention provides an extension of power headroom reporting provided by the user equipment (UE) to allow for a more efficient resource allocation by an evolved Node B (eNodeB). '957 patent at 1:22-26. In systems not utilizing the invention, “resources on the air interface are somehow wasted since the scheduler is not aware of how much the UE power budget is exceeded.” *Id.* at 3:16-18. The type of resource allocation that could benefit from this invention is not limited by the patent. The additional information in the power headroom report “can be important for performing correct radio resource management and link quality control decisions at the eNodeB, especially for the adaptation of the modulation and coding

scheme, UpLink (UL) power control and resource assignment.” *Id.* at 3:16-18.

The ’957 patent provides an exemplary list of resources that can be managed, allocated, assigned, or scheduled in response to receiving the extended power headroom report. *Id.* at 5:24-39. But resource blocks (also referred to as RBs) are merely one example of the resources appearing in that list. *Id.* at 3:28-29. The other examples include the “modulation and coding scheme,” “UL power,” “UL sounding channel,” and “signaling resources and power.” *Id.* at 3:28-36, 6:61-7:4. Defendants’ proposed construction excludes the allocation and adjustment of these other explicitly described resources based on the power headroom report.

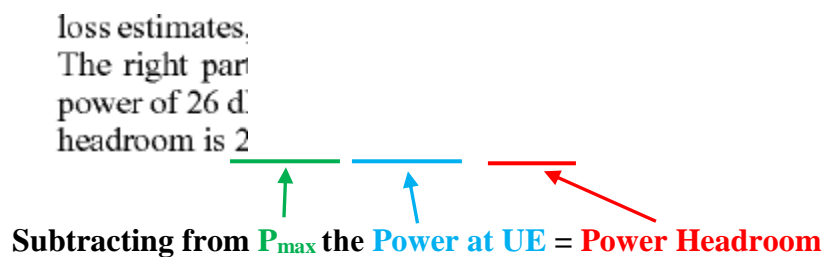
Because the term “radio network resource” is not limited by the claims or the specification, Defendants’ proposed construction should be rejected. *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001) (“[U]nless compelled to do otherwise, a court will give a claim term the full range of its ordinary meaning as understood by an artisan of ordinary skill.”). The term “radio network resource” does not require construction because its plain meaning is easily understood in the context of these claims. The ’957 patent describes various resources that are allocated, managed, scheduled, or assigned in response to the power headroom report. *See, e.g.*, ’957 patent at 4:1-15, 5:24-39, 6:4-12. Accordingly, to the extent the Court determines construction necessary, “resource radio resources” should be construed as “resources of a radio network that can be allocated, managed, scheduled, and/or assigned.”

2. “subtracting the nominal maximum transmission power and the power that the apparatus would use if it did not apply maximum power limitations” (’957 patent, claims 1, 7)

CCE’s Construction	Defendants’ Construction
“subtracting from the nominal maximum transmission power the power that the apparatus would use if it did not apply maximum power limitations”	Indefinite.

In view of the claim language and the patent specification, one of ordinary skill in the art would understand the term “subtracting the nominal maximum transmission power and the power that the apparatus would use if it did not apply maximum power limitations” to mean “subtracting from the nominal maximum transmission power the power that the apparatus would use if it did not apply maximum power limitations.” The claim limitation recites a computation that is referenced repeatedly throughout the ’957 patent without any ambiguity. CCE’s proposed construction clarifies the claim language to more accurately reflect that calculation (with the mere insertion of “from”) and should, therefore, be adopted.

Claims 1 and 7 make clear that the “subtracting” limitation recites the computation used “to determine the power headroom.” *See* ’957 patent at 9:19-22, 9:60-63. The ’957 patent definitively states that “power control headroom is the difference between the nominal maximum transmission power and the power at the UE, e.g. the power that the UE would use if it did not apply maximum power limitations.” *Id.* at 4:16-19. Further, the ’957 patent provides an example calculation that results in indisputable clarity that the “difference” is calculated by subtracting the power at the UE (the power that the UE would use if it did not apply maximum power limitations)² from the nominal maximum transmission power (P_{\max}):



Id. at 3:32-35 (annotated).

In addition to the specification’s overwhelming clarity, the prosecution history of the ’957

² This value is represented by the “right part of the min-function” of Equation 1. *See* ’957 patent at 3:28-35, 4:30-55, 4:61-66.

patent further confirms that there is no possible interpretation of the “subtracting” limitation other than that offered by CCE. In the most explicit terms possible, the applicant matched the “subtracting” claim limitation to the calculation represented by CCE’s proposed construction:

calcul

positiv

’957 patent FH, 06/20/2013 Resp. to OA at 12-13 (CCE576-000854–855).

In view of the indisputable clarity provided by the ’957 patent specification and prosecution history, CCE’s proposed construction of the “subtracting” limitation is the only reasonable interpretation and should be adopted.

3. “when applicable” (’957 patent, claims 4, 10)

CCE’s Construction	Defendants’ Construction
No construction necessary. Alternatively: “when available”	Indefinite.

The term “when applicable” is easily understood by its plain and ordinary meaning in the context of claims 4 and 10 and, therefore, does not require construction. The term “when applicable” is used in the same manner in both claims 4 and 10, as follows: “the allocating radio resources comprises allocating additional radio network resources to a user equipment when the power headroom indicates positive headroom, **when applicable**.” ’957 patent, 10:14-17 (emphasis added). Because the claim limitation requires allocating *additional* radio network resources, one of ordinary skill in the art would understand that the qualification “when applicable” is included

because the recited allocation cannot occur unless “additional radio network resources” are available. As evidence of this, the same qualification is not present in the immediately subsequent limitation that requires the allocation of *fewer* radio network resources—because allocating fewer resources can always be accomplished, regardless of availability. *Id.* at 10:17-19.

The ’957 patent specification confirms that allocation can only be accomplished based on the available resources: “[t]he extension of the reported range can lead to a more efficient **utilization of the available resources**.” *Id.* at 5:59-60 (emphasis added). As understood by a person of skill in the art, the radio network resources are available in limited supply. For example, the patent describes reducing the allocation of resources to a first connection, so that those resources can be assigned to other connections. *Id.* at 6:4-12. Claims 4 and 10 acknowledge the limited availability of “additional resources” with the qualifying language “when applicable.”

Because the term is easily understood with its plain meaning, the limitation “when applicable” does not require construction. But to the extent the Court determines that construction is necessary, it should be construed as “when available.”

4. ’957 Patent Claims 7-9

CCE’s Construction	Defendants’ Construction
Definite.	Indefinite as improperly mixing method and apparatus elements in a single claim

Because CCE is not offering a construction of these terms and Defendants’ bear the burden of proving indefiniteness, CCE will respond to Defendants’ position in its reply brief.

5. “one or more of the predetermined subframes” (’022 patent, claims 1, 6)

CCE’s Construction	Defendants’ Construction
“one or more predetermined subframes”	Indefinite for lack of antecedent basis.

CCE’s construction of the term “one or more of the predetermined subframes” comports

with the obvious and reasonable understanding of this limitation and clarifies the meaning to be consistent with a previous iteration of the claim language found in the prosecution history of the '022 patent. When viewed in totality, the meaning of “one or more of the predetermined subframes” would be reasonably ascertained by those skilled in the art to be “one or more predetermined subframes.” There is no reasonable debate as to the correct meaning, and therefore, the Court should correct this obvious clerical error.

A court may correct an error in a patent claim “if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims.” *See Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1354 (Fed.Cir.2003). While CCE’s proposed construction is well-understood to be correct when viewed in the context of the claims, review of the prosecution history leaves no room to doubt this conclusion. Indeed, the disputed claim limitation originally appeared as “one or more predetermined subframes.” ’022 patent FH, 9/28/2011 Resp. to OA at 2 (CCE576-000226) (amending claim 1 to include the limitation “wherein the assignment includes excluding one or more predetermined subframes in even-numbered radio frames if the subframes are within the transmission window”). In a subsequent amendment, the limitation “determining whether one or more predetermined subframes are a mixture of multi-cast subframes and unicast subframes” was added to claim 1 and the currently disputed limitation was amended to “one of more of the predetermined subframes” to account for the newly added limitation already introducing “one or more predetermined subframes.” ’022 patent FH, 9/4/2012 Resp. to OA at 2 (CCE576-000075). But in a final amendment leading to allowance, claim 1 was amended to remove the “determining whether one or more predetermined subframes are a mixture of multi-cast subframes and unicast subframes” limitation. ’022 patent FH, 12/13/2012 Resp. to OA at 2

(CCE576-000058). However, in that amendment, the currently disputed limitation—“excluding one of more of the predetermined subframes in even-numbered radio frames”—was not also amended to account for the deletion of the “determining” limitation that introduced “one or more predetermined subframes.” *Id.* Claim 1 issued with the limitation “one of more of the predetermined subframes” and the same language was imported into claim 6 as well.

The prosecution history makes clear that “one or more of the predetermined subframes” should be understood to mean “one or more predetermined subframes,” as it appeared in the original amendment incorporating this limitation. *See* ’022 patent FH, 9/28/2011 Resp. to OA at 2 (CCE576-000226). Accordingly, this clerical error is obvious on the face of the patent, and no reasonable debate exists as to the meaning of the claim term. *See Linksmart Wireless Tech., LLC v. T-Mobile USA, Inc.*, No. 2:08-CV-264-DF-CE, 2010 WL 2640402, at *10 (E.D. Tex. June 30, 2010) (finding that the omission of the term “data” was an obvious, minor typographical error and could be corrected by the court.) The Court should adopt Plaintiff’s proposed construction, which reflects the undisputable meaning of this term.

6. “establish(ing) channel information with respect to the selected downlink component carrier” (’472 patent, claims 1, 28)

CCE’s Construction	Defendants’ Construction
<p>No construction necessary.</p> <p>Alternatively: “monitoring, evaluating, and/or collecting channel information with respect to the selected downlink component carrier”</p>	<p>Indefinite.</p> <p>To the extent the Court determines that the claims are not indefinite: “establish[ing] aperiodic channel information with respect to the selected downlink component carrier”</p>

The dispute between the parties focuses on Defendants’ attempt to require the channel information that is established in this limitation to be “aperiodic” channel information. This restriction imposed by Defendants’ is contrary to the claim language and the description of the invention by the ’472 patent. Because Defendants’ construction imposes an unnecessary restriction

on the channel information, it should be rejected. Beyond that dispute, the parties agree that the limitation does not need construction. Thus, the Court should find the limitation to be definite and apply the plain and ordinary meaning to this limitation.

Defendants’ proposal that the channel information that is established with respect to the selected downlink component carrier be “aperiodic” channel information is unsupported and inaccurate. Claims 1 and 28 each recite “a request for providing aperiodic channel information with respect to a selected downlink component carrier.” The term “aperiodic” is understood by those skilled in the art to modify the “providing” of the channel information—*not the channel information*. See ’472 patent at 13:3-6, 13:10-11, 15:2-4, 15:7-8. Thus, where the claims refer to the channel information itself—as opposed to the providing of channel information—the channel information is not recited as “aperiodic” channel information. See, e.g., *id.* at 13:12-15, 15:9-12 (reciting “establishing channel information” and “sending the channel information”).

Defendants’ attempt to attach “aperiodic” to the channel information ignores common sense, because there is nothing periodic or aperiodic about channel information. As described by the ’472 patent, channel information (e.g., channel state information (CSI) or channel quality indicators (CQI)) is the feedback provided by the user equipment (UE) allowing adaptive modulation and coding schemes with efficient frequency domain link adaptation scheduling that is necessary for implementation of LTE carrier aggregation. *Id.* at 2:1-4. The channel information “may include channel quality indicators (CQI), Precoding Matrix Indicators (PMI), Rank Indicators (RI) and/or channel frequency or impulse response and/or channel covariance matrix.” *Id.* at 2:4-8. These various metrics comprise measurements that describe the current state of the component carriers, and may be compiled in a CSI report, for example. The information is neither periodic nor aperiodic—but the manner in which the report is provided by the UE may be. The

'472 patent contrasts a periodic CSI report to an aperiodic CSI report, explaining that “an aperiodic CSI report is sent by the UE [only] when it is triggered to do so,” as opposed to a periodic report that would be scheduled to be sent automatically based upon, for example, a periodic timer. *Id.* at 3:7-9. Thus, the '472 patent's occasional characterization of the channel information as “aperiodic channel information” refers to the *aperiodic sending* of CSI reports, but does not characterize the information within the reports—i.e., the channel information.

“Establishing channel information with respect to the selected downlink component carrier” occurs in response to receiving a request for providing aperiodic channel information. '472 patent at 3:45-61. As described by the '472 patent, the “establishing” comprises the following: “the [UE] processor determines the component carrier to be monitored or evaluated . . . [t]hen, the processor monitors the channel in order to detect the channel quality of the component carriers or the like.” *Id.* As shown above, Defendants' attempt to attach an “aperiodic” limitation to the channel information that is “established” in this process is inconsistent with the specification.

Defendants' construction should be rejected and the term “establishing channel information with respect to the selected downlink component carrier” should be given its plain meaning and found definite. To the extent the Court determines construction of “establishing” to be necessary, the limitation should be construed as “monitoring, evaluating, and/or collecting channel information with respect to the selected downlink component carrier.”

7. “the channel information” ('472 patent, claims 1, 10, 11, 26, 28, 55; '262 patent, claims 14, 29)

CCE's Construction	Defendants' Construction
No construction necessary.	Indefinite. To the extent the Court determines that the claims are not indefinite: “the aperiodic channel information”

The dispute between the parties is essentially the same as that discussed above with regard to “establishing channel information.” Defendants again attempt to require the channel information that is established to be “aperiodic” channel information. The limitation “the channel information” appears in claims of both the ’472 patent and the ’262 patent. The ’262 patent is a continuation of the ’472 patent and shares a common specification. The term “the channel information” is used in the same manner in the claims of both patents. For the same reasons provided above with regard to “establishing channel information,” Defendants’ construction should be rejected. CCE’s arguments in regard to “establishing channel information” are incorporated herein by reference.

The term “the channel information” requires no construction. In each claim in which it appears, there is no uncertainty as to its meaning. “The channel information” refers unambiguously to the channel information that is, or will be, provided (i.e., “sent”) in response to the request for providing aperiodic channel information. The restriction imposed by Defendants’ construction is contrary to the claim language and the description of the invention by the ’472 and ’262 patents.

Again, there is nothing periodic or aperiodic about channel information. As described by the ’472 patent, the channel information “may include channel quality indicators (CQI), Precoding Matrix Indicators (PMI), Rank Indicators (RI) and/or channel frequency or impulse response and/or channel covariance matrix.” ’472 patent at 2:4-8. These various metrics comprise measurements that describe the current state of the component carriers, and may be compiled in a CSI report, for example. The information is neither periodic nor aperiodic—but the manner in which the report is provided by the UE may be. The ’472 patent contrasts a periodic CSI report to an aperiodic CSI report, explaining that “an aperiodic CSI report is sent by the UE [only] when it is triggered to do so,” as opposed to a periodic report that would be scheduled to be sent automatically based upon, for example, a periodic timer. *Id.* at 3:7-9. Thus, the ’472 patent’s

occasional characterization of the channel information as “aperiodic channel information” refers to the *aperiodic sending* of CSI reports, but does not characterize the information within the reports—i.e., the channel information.

The term “the channel information” has a plain meaning that is both definite and easily understood within the context of the claims and specifications of the ’472 and ’262 patents. Accordingly, Defendants’ construction should be rejected and the plain and ordinary meaning should be applied to “the channel information.”

8. “on a component carrier for which the aperiodic channel information is provided” (’472 patent, claims 15 and 44)

CCE’s Construction	Defendants’ Construction
<p>No construction necessary.</p> <p>Alternatively: “on a component carrier for which the aperiodic channel information is to be provided”</p>	<p>Indefinite.</p>

The term “on a component carrier for which the aperiodic channel information is provided” is easily understood by its plain meaning. When read in view of the surrounding claim language and the patent specification, the term is unambiguously understood by those skilled in the art to mean “on a component carrier for which the aperiodic channel information is to be provided.” The Court should reject Defendants’ unsupportable position that fails to account for the indisputable ability of those skilled in the art to discern the proper meaning of this term.

A basic understanding of the invention is all that is required to understand the meaning of this disputed claim limitation. Claim 44, for example, comprises two steps: (1) “generating a request for providing aperiodic channel information with respect to a selected downlink component carrier . . .;” and (2) “sending the request for providing the aperiodic channel information on a component carrier for which the aperiodic channel information is provided.” ’472

patent at 16:10-17. The '472 patent specification describes the sending of the request in the exact terms of the claim, with the correction that it clarifies that the request is “sent on the component carrier for which the aperiodic channel information is to be provided.” *Id.* at 10:11-13 (emphasis added). A person of ordinary skill in the art with any question as to what this limitation means would certainly refer to the specification to surmise the meaning. Upon review of the specification, there can be no doubt as to this limitation’s meaning.

Indeed, claims 1, 16, and 31 of the '262 patent (which is a continuation of the '472 patent) all include the same limitation, but match the description in the specification—“on a component carrier for which the aperiodic channel information is to be provided.” '262 patent at 13:11-14, 14:9-11, 15:5-7. Notably, these claims were amended during prosecution in an Examiner’s Amendment to replace “is provided” with “is to be provided” following a Notice of Allowance. '262 patent FH, 5/27/2015 Corrected Notice of Allowability at 2 (CCE576-001569).

Defendants do not challenge the analogous claim language in the '262 patent, presumably because they agree that the replacement of “is provided” with “is to be provided” provides clarity to the claim limitation. The Court should provide the clarity that Defendants seek on the '472 patent by construing the limitation as “on a component carrier for which the aperiodic channel information is to be provided,” and thereby, removing the dispute.

B. Claim Limitations Alleged To Be Governed by 35 U.S.C. § 112 ¶ 6.

Defendants’ contention that twelve claim limitations across the asserted patents are means-plus-function claim terms under 35 U.S.C. § 112 ¶ 6 should be rejected in each case. None of the terms alleged to be governed by § 112 ¶ 6 include the use of the word “means,” and are, therefore, presumed *not* to be means-plus-function limitations. *Personalized Media*, 161 F.3d at 703-04. Each of the alleged limitations recites sufficiently definite structure for performing the claimed functions. Defendants’ arguments are merely an attempt to stretch the applicability of the law in

view of the Federal Circuit’s *Williamson* ruling that overruled the “strong” presumption that had been applied based on the use (or lack of use) of the term “means.” *See Williamson*, 792 F.3d at 1349. However, that presumption still applies. *Id.* Defendants must overcome that presumption for each of the disputed claim limitations. They cannot meet that burden, even under the “balanced analytical scale” of *Williamson* that will undoubtedly be the focus of their arguments. *See id.*

Of the twelve disputed claim limitations, nine of them are limitations reciting a “processor configured to . . .” perform a function. Two more are limitations involving “memory including software . . . configured, with the at least one processor . . .” The same (or substantially similar) arguments that limitations reciting “a processor” or “software” performing a function should be governed by § 112 ¶ 6 have been rejected by courts in this district repeatedly. *See, e.g., Smartflash LLC v. Apple Inc.*, 77 F. Supp. 3d 535, 562 (E.D. Tex. 2014); *Syncpoint Imaging, LLC v. Nintendo of Am. Inc.*, No. 2:15-CV-00247-JRG-RSP, 2016 WL 55118, at *18 (E.D. Tex. Jan. 5, 2016); *Advanced Mktg. Sys., LLC v. CVS Pharmacy, Inc.*, No. 6:15-CV-134-JRG-KNM, 2016 WL 1741396, at *20 (E.D. Tex. May 3, 2016); *Uniloc USA, Inc. v. Autodesk, Inc.*, No. 2:15-CV-1187-JRG-RSP, 2016 WL 3647977, at *18-20 (E.D. Tex. July 7, 2016). The courts have found that those terms have a sufficiently definite meaning as the name for structure. *Smartflash*, 77 F. Supp. 3d at 562-63 (finding claim terms reciting “processor” and “code” were sufficiently coupled to the code’s or processor’s operation and therefore were not means-plus-function terms), reconsideration denied, 6:13-CV-447-JRG-KNM, 2015 WL 4208754 (E.D. Tex. July 7, 2015) (finding that “processor” and “code” are not a nonce words after *Williamson*); *Syncpoint*, 2016 WL 55118 at *18 (finding the phrase “processor . . . for . . .” connotes sufficiently definite structure to one of ordinary skill in the art); *Advanced Marketing*, 2016 WL 1741396 at *20 (finding the phrase “data processor for” not to be a generic nonstructural term such as the terms “means,” “element,” and

“device” that typically do not connote sufficient structure); *Uniloc USA*, 2016 WL 3647977 at *20 (finding that the phrase “add-on computer software code” connotes sufficiently definite structure); *see also Williamson*, 792 F.3d at 1349.

The Federal Circuit has agreed that terms such as those in dispute here connote sufficiently definite structure when coupled with a description of the operation. *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1320 (Fed.Cir.2004) (finding that “when the structure-connoting term ‘circuit’ is coupled with a description of the circuit’s operation, sufficient structural meaning generally will be conveyed to persons of ordinary skill in the art, and § 112 ¶ 6 presumptively will not apply”). In *Personalized Media*, the Federal Circuit reversed the International Trade Commission’s holding that the term “digital detector for [performing a function]” was governed by § 112, ¶ 6 and that the claim was indefinite for lack of structure. *Personalized Media*, 161 F.3d at 700–01, 703–707. The Federal Circuit held that “‘detector’ had a well-known meaning to those of skill in the electrical arts connotative of structure.” *Id.* at 704–05.

Other district courts have also rejected the same arguments presented by Defendants here, finding that terms such as “processor” and “software” do not fall under 112 ¶ 6 when coupled to their operations. *Collaborative Agreements, LLC v. Adobe Sys. Inc.*, No. 15-CV-03853-EMC, 2015 WL 7753293, at *4–8 (N.D. Cal. Dec. 2, 2015) (“code segment [for performing a function]” found to be sufficiently definite structure on reconsideration after *Williamson* because the claim described the operation of the code segment); *Finjan, Inc., v. Proofpoint, Inc.*, No. 13-CV-05808-HSG, 2015 WL 7770208, at *9–11 (N.D. Cal. Dec. 3, 2015) (“processor [for performing a function]” found to be sufficiently definite structure because the claim described how the processor functions with the other claim components); *SuperSpeed, L.L.C. v. Google, Inc.*, No. H-12-1688, 2014 WL 129225, at *22–23 (S.D. Tex. Jan. 14, 2014) (“executable . . . code” found to be

sufficiently definite structure because the claim describes the operation of the code).

Defendants attempt to characterize the disputed claim limitations as means-plus-function limitations, and thereafter, argue that those claims are indefinite. This approach should be rejected for the same reasons found by the courts in the above cases. As will be shown below in more detail, the claim terms at issue here mirror those that have been repeatedly found by the courts to connote sufficient and definite structure.

1. The “processor configured to . . .” limitations of the ’472 patent

Claim Term	CCE’s Construction	Defendants’ Construction
“a processor configured to: determine the selected downlink component carrier based on which component carrier of the plurality of component carriers carried the request for providing the aperiodic channel information” (’472 patent, claim 1)	Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): <u>Function</u> : determine the selected downlink component carrier based on which component carrier of the plurality of component carriers carried the request for providing the aperiodic channel information. <u>Structure</u> : “a processor”	Governed by 35 U.S.C. § 112, ¶6. <u>Function</u> : “determine the selected downlink component [carrier] based on which component carrier of the plurality of component carriers carried the request for providing the aperiodic channel information” <u>Structure</u> : no corresponding structure (algorithm) disclosed. Indefinite.
“a processor configured to . . . establish channel information with respect to the selected downlink component carrier” (’472 patent, claim 1)	Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): <u>Function</u> : establish channel information with respect to the selected downlink component carrier. <u>Structure</u> : “a processor”	Governed by 35 U.S.C. § 112, ¶6. <u>Function</u> : “establish channel information with respect to the selected downlink component carrier” <u>Structure</u> : no corresponding structure (algorithm) disclosed. Indefinite.
“wherein the processor is configured to provide channel information for at least one of the other component carriers of the	Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): <u>Function</u> : provide channel information for at least one of the	Governed by 35 U.S.C. § 112, ¶6. <u>Function</u> : “provide channel information for at least one of the other component carriers of the plurality of component carriers other than the

plurality of component carriers other than the selected downlink component carrier” (’472 patent, claim 10)	other component carriers of the plurality of component carriers other than the selected downlink component carrier. <u>Structure</u> : “a processor”	selected downlink component carrier” <u>Structure</u> : no corresponding structure (algorithm) disclosed. Indefinite.
“a processor configured to generate a request for providing aperiodic channel information with respect to a selected downlink component carrier of a plurality of component carriers” (’472 patent, claim 15)	Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): <u>Function</u> : generate a request for providing aperiodic channel information with respect to a selected downlink component carrier of a plurality of component carriers. <u>Structure</u> : “a processor”	Governed by 35 U.S.C. § 112, ¶6. <u>Function</u> : “generate a request for providing aperiodic channel information with respect to a selected downlink component carrier of a plurality of component carriers” <u>Structure</u> : no corresponding structure (algorithm) disclosed. Indefinite.
“wherein the processor is configured to generate a request for providing channel information for at least one of the other component carriers of the plurality of component carriers other than the selected component carrier” (’472 patent, claim 25)	Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): <u>Function</u> : generate a request for providing channel information for at least one of the other component carriers of the plurality of component carriers other than the selected component carrier. <u>Structure</u> : “a processor”	Governed by 35 U.S.C. § 112, ¶6. <u>Function</u> : “generate a request for providing channel information for at least one of the other component carriers of the plurality of component carriers other than the selected component carrier” <u>Structure</u> : no corresponding structure (algorithm) disclosed. Indefinite.
“wherein the processor is configured to include the request for providing the aperiodic channel information in an uplink grant” (’472 patent, claim 27)	Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): <u>Function</u> : include the request for providing the aperiodic channel information in an uplink grant. <u>Structure</u> : a processor	Governed by 35 U.S.C. § 112, ¶6. <u>Function</u> : “include the request for providing the aperiodic channel information in an uplink grant” <u>Structure</u> : no corresponding structure (algorithm) disclosed. Indefinite.

Each of the above claim limitations recites a processor configured to perform a function. Because, in each case, the term “processor,” which itself connotes structure, is coupled to claim language describing the operation of the processor, the term “processor” would be understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. *See Williamson*, 792 F.3d at 1349; *Linear Tech*, 379 F.3d at 1320.

Just as was found in *Smartflash*, *Syncpoint*, and *Advanced Marketing*, the term “processor” is not a nonce word such as “means,” “element,” or “device” in the context of these claims because it connotes a well-understood structure having sufficient definition within the art. *Smartflash*, 77 F. Supp. 3d at 562-63; *Smartflash*, 2015 WL 4208754 at *3; *Syncpoint*, 2016 WL 55118 at *18; *Advanced Marketing*, 2016 WL 1741396 at *20. Further, the claims themselves include the “objectives or operations” of the processor. *Linear Tech.*, 379 F.3d 1311, 1320-21. For example, in claim 1, the processor is coupled to two operations: (1) determining the selected downlink component carrier; and (2) establishing channel information. ’472 patent at 13:7-13. The “determining” operation is further described to be implemented by identifying “which component carrier of the plurality of component carriers carried the request.” *Id.* The “establishing” operation is further defined to operate on “the selected downlink component carrier.” *Id.* Claim 10 couples yet another operation to the processor of claim 1: “provid[ing] channel information for at least one of the other component carriers.” *Id.* at 13:54-56. Claim 15 similarly identifies the operation coupled to the processor as “generat[ing] a request for providing aperiodic channel information.” *Id.* at 14:8-11. Claim 25 recites the processor operation of generating a second request, and claim 27 further specifies the operation of including the first request in an uplink grant. *Id.* at 14:57-61, 14:65-67. These operations found within the claim limitations and tied to the recited processors are specific and inform the structure of the processor such that one of ordinary skill would find

sufficiently definitive structure to the limitations.

The specification further informs the claims by describing *how* each operation is implemented by the processor. *See Advanced Marketing*, 2016 WL 1741396 at *20. For example, the '472 patent specification discusses in detail how the processor determines the selected downlink component carrier, providing six separate embodiments for implementing the determination of the selected downlink component carrier. '472 patent at 5:1-6:41. The first embodiment, for example, derives the selected downlink component carrier from the component carrier that carried the uplink grant with the aperiodic CSI trigger. *Id.* at 5:22-33. The specification also describes how the processor of claim 1 would “establish channel information.” Specifically, the '472 patent states that “the processor determines the component carrier to be monitored or evaluated, for example based on information as will be described in the following. Then, the processor monitors the channel in order to detect the channel quality of the component carriers or the like.” *Id.* at 3:56-61. Thus, not only do the claims recite sufficient structure for the processor, the specification further informs the claimed operations such that a person of ordinary skill can easily understand the structure, scope, and definition of the claimed “processor” limitations. Accordingly, each of the above claim limitations reciting a “processor” is not a means-plus-function limitation requiring construction under 35 U.S.C. § 112 ¶ 6.

To the extent the Court determines that these limitations should be construed under § 112 ¶ 6, the corresponding structure to each recited function is a processor. The specification broadly describes a processor capable of performing the recited functions. The processor would be incorporated into a user equipment (UE) in the case of claims 1 and 10, and would be incorporated into an evolved node B (eNB) in the case of claims 15, 25, and 27. *See id.* at 3:45-6:4, 6:22-29, 7:45-61, 8:4-22, 10:11-13, 11:39-42, 12:4-61, Figures 1-3.

2. The “processor configured to . . .” limitations of the ’262 patent

Claim Term	CCE’s Construction	Defendants’ Construction
“a processor configured to generate a request for providing aperiodic channel information with respect to a selected downlink component carrier of a plurality of non-contiguous component carriers” (’262 patent, claim 1)	Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): <u>Function</u> : generate a request for providing aperiodic channel information with respect to a selected downlink component carrier of a plurality of non-contiguous component carriers. <u>Structure</u> : “a processor”	Governed by 35 U.S.C. § 112, ¶6. <u>Function</u> : “generate a request for providing aperiodic channel information with respect to a selected downlink component carrier of a plurality of non-contiguous component carriers” <u>Structure</u> : no corresponding structure (algorithm) disclosed. Indefinite.
“wherein the processor is further configured to include the request for providing the aperiodic channel information in an uplink grant.” (’262 patent, claim 10)	Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): <u>Function</u> : include the request for providing the aperiodic channel information in an uplink grant. <u>Structure</u> : “a processor”	Governed by 35 U.S.C. § 112, ¶6. <u>Function</u> : “include the request for providing the aperiodic channel information in an uplink grant” <u>Structure</u> : no corresponding structure (algorithm) disclosed. Indefinite.
“wherein the processor is further configured to generate a request for providing channel information for at least one of the other component carriers of the plurality of non-contiguous component carriers other than the selected component carrier.” (’262 patent, claim 13)	Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): <u>Function</u> : generate a request for providing channel information for at least one of the other component carriers of the plurality of non-contiguous component carriers other than the selected component carrier. <u>Structure</u> : “a processor”	Governed by 35 U.S.C. § 112, ¶6. <u>Function</u> : “generate a request for providing channel information for at least one of the other component carriers of the plurality of non-contiguous component carriers other than the selected component carrier” <u>Structure</u> : no corresponding structure (algorithm) disclosed. Indefinite.

The disputed “processor” claim limitations of the ’262 patent are substantially the same as the “processor” limitations found in the ’472 patent that were discussed above. Indeed, the

“processor” limitation of claim 1 of the ’262 patent effectively matches the “processor” limitation of claim 15 of the ’472 patent. Similarly the limitation of claim 10 matches the limitation of claim 27 of the ’472 patent, and the limitation of claim 13 matches the limitation of claim 25 of the ’472 patent, for purposes of this dispute. The ’262 patent and the ’472 patent share a common specification and therefore, any references to the specification of the ’472 patent applies equally to the ’262 patent specification. Accordingly, CCE herein incorporates by reference the arguments and discussion provided above pertaining to the “processor” limitations of the ’472 patent.

3. The “memory including software . . .” limitations of the ’676 patent

Claim Term	CCE’s Construction	Defendants’ Construction
“memory including software . . . configured, with the at least one processor, to cause the apparatus to at least: determine that a set of at least one triggering criterion is met” (’676 patent, claim 19)	Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): <u>Function</u> : determine that a set of at least one triggering criterion is met. <u>Structure</u> : “memory including software and at least one processor”	Governed by 35 U.S.C. § 112, ¶6. <u>Function</u> : “cause the apparatus to at least: determine that a set of at least one triggering criterion is met” <u>Structure</u> : no corresponding structure disclosed. Indefinite.
“memory including software . . . configured, with the at least one processor, to cause the apparatus to at least . . . provide a power control headroom report on an uplink from user equipment, in response to the set having been met” (claim 19)	Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): <u>Function</u> : provide a power control headroom report on an uplink from user equipment, in response to the set having been met. <u>Structure</u> : “memory including software and at least one processor”	Governed by 35 U.S.C. § 112, ¶6. <u>Function</u> : “include the request for providing the aperiodic channel information in an uplink grant” <u>Structure</u> : no corresponding structure disclosed. Indefinite.

Because the “memory including software” limitations do not use the word “means,” they

are presumed not to be means-plus function limitations. Further, the “memory including software” claim limitations would be understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. *See Williamson*, 792 F.3d at 1349; *Linear Tech*, 379 F.3d at 1320. The limitations recite structure in the form of memory, software, and a processor. Each of these claimed elements has its own well-understood structure, and when combined together, as the claim limitations do, connotes more than sufficient structure, such that a person of ordinary skill in the art is informed of the definition of the claim limitation by far more than the mere function that these elements perform. Further, because the limitations recite a processor that is configured with memory and software to carry out the recited operations, these claim limitations are not means-plus-function limitations for the same reasons provided above with regard to the “processor” limitations of the ’472 patent. Those arguments are incorporated herein by reference.

Though the recital of a processor is sufficient to end this inquiry and find that these limitations are not governed by § 112 ¶ 6, the recitation of “memory” and “software” provide even further structure beyond the processor. Each of these claimed elements connote their own structure that is sufficiently definite to end the inquiry. Like “processor” and “code,” “memory” is not a generic nonstructural term such as “means,” “element,” or “device.” *See Advanced Marketing*, 2016 WL 1741396 at *20; *see also Smartflash*, 77 F. Supp. 3d at 562-63. “Memory” has a well-known structure that a person of ordinary skill would have no problem understanding. The ’676 patent provides examples of the various memory structures that would be known to a person of skill in the art: “A memory may comprise any known type of data storage and/or transmission media, including magnetic media, optical media, random access memory (RAM), read-only memory (ROM), a data cache, a data object, etc. Moreover, similar to the CPU, the memory may reside at a single physical location, comprising one or more types of data storage, or be distributed

across a plurality of physical systems in various forms.” ’676 patent at 5:63-6:3.

Additionally, courts in this district, as well as others, have repeatedly found that software terms (including “software code,” “executable . . . code,” “code segment,” and “code”) have sufficiently definite structure and, when coupled to the operations performed, are not means-plus-function limitations. *Smartflash*, 77 F. Supp. 3d at 562-63; *Smartflash*, 2015 WL 4208754 at *3; *Uniloc USA*, 2016 WL 3647977 at *20; *Collaborative Agreements*, 2015 WL 7753293 at *4–8; *SuperSpeed*, 2014 WL 129225 at *22–23. Each of the recited structural elements—“processor,” “memory,” and “software,”—have sufficient structure on their own, and when paired with each other, the elements form a system with an undeniably sufficient structure. Defendants’ attempt to improperly characterize these claim limitations should be rejected.

Though the parties list the “memory including software” limitations as two separate claim limitations, they are more properly considered as one for purposes of any determination pertaining to 35 U.S.C. 112, ¶ 6. The disputed limitation—“memory including software . . . configured, with the at least one processor”—is recited once by claim 19, but is required to cause the apparatus to perform two operations: (1) “determine that a set of at least one triggering criterion is met” (as found in the first claim term above); and (2) “provide a power control headroom report on an uplink from user equipment, in response to the set having been met” (as found in the second claim term above). ’676 patent at 7:61-67. Each of the claim terms recite an operation that is coupled to the system formed by the memory, software, and processor.

The first operation recited is “determin[ing] that a set of at least one triggering criterion is met.” The claim further describes *how* this “determining” operation is performed in great detail. *See, e.g., id.* at 8:4-10 (“wherein the set of at least one triggering criterion comprises a criterion being met based on reaching a threshold of the at least one threshold of k transmission time

intervals following a previous power control headroom report, wherein k is an integer and wherein said at least one threshold adjustable via the signal comprises adjusting the threshold integer k.”).

The second operation recited is “provid[ing] a power control headroom report in an uplink from user equipment, in response to the set having been met.” *Id.* at 7:66-67. This operation when coupled with the memory, software, and processor provides a high level of structure, including how the power headroom report is provided (“in an uplink from user equipment”), and when it is provided (“in response to the set having been met”).

Thus, the claims recite sufficient structure for the “memory including software . . . configured, with the at least one processor,” such that a person of ordinary skill can easily understand the structure, scope, and definition of the claimed limitations. Accordingly, each of the above claim limitations reciting a “memory including software” is not a means-plus-function limitation requiring construction under 35 U.S.C. § 112 ¶ 6.

If the Court determines that these limitations should be construed under § 112 ¶ 6, the corresponding structure to each limitation is a memory including software and at least one processor. The specification describes a memory having software instructions in combination with at least one processor for implementing the invention. *See id.* at 4:28-5:5, 5:22-6:23, Figures 1-4.

4. The “redundancy version signaling module” limitation of the ’022 patent

Claim Term	CCE’s Construction	Defendants’ Construction
“redundancy version signaling module configured to detect start of a system information message transmission window and to assign a redundancy version sequence at the start of the transmission	Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): <u>Function</u> : detect start of a system information message transmission window and assigning a redundancy version sequence at the start of the transmission window.	Governed by 35 U.S.C. § 112, ¶6. <u>Function</u> : detect start of a system information message transmission window and to assign a redundancy version sequence at the start of the transmission window” <u>Structure</u> : no corresponding structure disclosed. Indefinite.

window” (’022 patent, claim 6)	<u>Structure</u> : “a system combining one or more processors (including DSPs, ASICs, FPGAs, etc.), memory, and software, and equivalents thereof”	
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The “redundancy version signaling module” (“RV signaling module”) is the name of a sufficiently definite structure that is described by the ’022 patent in great detail. The claim language itself imparts structure on the RV signaling module. In particular, the RV signaling module is required to: (1) detect the start of a system information message transmission window, and (2) assign a redundancy version sequence at the start of the transmission window. A person of ordinary skill in the art would understand that a “system information message” is utilized within a wireless network to transmit information and data between one or more user equipment (UE) and a base station (e.g., eNB), and the RV signaling module would reside in a UE, an eNB, or both. The RV signaling module enables the communications system to efficiently achieve error detection and retransmission of data packets.

The specification of the ’022 patent informs the meaning and structure of the RV signaling module. Referring to Figure 1, the eNB 103 and UE 101 are shown, in this exemplary embodiment, to each possess RV signaling modules (117a and 117b, respectively). ’022 patent at 5:3-5, Figure 1. The RV signaling module performs the implicit signaling of redundancy version information, which “may be implemented via software, hardware (e.g., general processor, Digital Signal Processing (DSP) chip, an Application Specific Integrated Circuit (ASIC), Field Programmable Gate Arrays (FPGAs), etc.), firmware, or a combination thereof.” *Id.* at 13:56-62. Figure 11 illustrates the exemplary hardware that may be used for implementing the RV signaling module.

As described by the specification, the various elements of computing system 1100 may operate in combination to perform the operations of the RV signaling module. *Id.* at 14:25-28 (“[T]he processes described herein can be provided by the computing system 1100 in response to

the processor 1103 executing an arrangement of instructions contained in main memory 1105.”) The specification generally describes that the claimed process (as performed by the RV signaling module) would be implemented by a processor executing a set of software instructions that can be loaded from a storage device into main memory prior to execution. *Id.* at 14:29-36. Other variations on the structure of the RV signaling module are described where either hard-wired circuitry or reconfigurable hardware (e.g., FPGAs) are used in place of or in combination with software instructions to form the redundancy version signaling module. *Id.* at 14:36-45.

Thus, the claim language when viewed in light of the specification imparts a definitive structure to the name “RV signaling module.” In particular, given a person of ordinary skill in the art’s understanding of the various hardware and software combinations that would be implemented with a UE and eNB, the disputed claim limitation would be understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. *See Williamson*, 792 F.3d at 1349; *Linear Tech*, 379 F.3d at 1320. The name “RV signaling module” connotes a definite structure in the form of a system combining one or more processors (including DSPs, ASICs, FPGAs, etc.), memory, and software. Accordingly, the “redundancy version signaling module” is not a means-plus-function limitation requiring construction under 35 U.S.C. § 112 ¶ 6.

To the extent the Court determines that this limitation should be construed under § 112 ¶ 6, the structure corresponding to the redundancy version signaling module is a system combining one or more processors (including DSPs, ASICs, FPGAs, etc.), memory, and software. As described above, this structure is specifically supported by the specification of the ’022 patent. *See* ’022 patent at 13:63-15:54, Figures 11, 12.

IV. CONCLUSION

For the reasons discussed above, CCE respectfully requests that the Court adopt all of its proposed constructions and reject all of Defendants’ constructions.

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Respectfully submitted,

/s/ Terry A. Saad

Jeffrey R. Bragalone (lead attorney)

Texas Bar No. 02855775

Monte M. Bond

Texas Bar No. 02585625

Terry A. Saad

Texas Bar No. 24066015

Jonathan H. Rastegar

Texas Bar No. 24064043

BRAGALONE CONROY PC

2200 Ross Avenue

Suite 4500W

Dallas, TX 75201

Tel: (214) 785-6670

Fax: (214) 785-6680

jbragalone@bcpc-law.com

mbond@bcpc-law.com

tsaad@bcpc-law.com

jrastegar@bcpc-law.com

Edward R. Nelson, III

ed@nelbum.com

Texas Bar No. 00797142

Thomas C. Cecil

tom@nelbum.com

Texas Bar No. 24069489

NELSON BUMGARDNER, P.C.

3131 West 7th Street, Suite 300

Fort Worth, Texas 76107

Phone: (817) 377-9111

Fax: (817) 377-3485

T. John Ward, Jr.

State Bar No. 00794818

Claire Abernathy Henry

State Bar No. 24053063

Wesley Hill

State Bar No. 24032294

WARD, SMITH & HILL, PLLC

P.O. Box 1231

Longview, Texas 75606-1231

(903) 757-6400 (telephone)

(903) 757-2323 (facsimile)

E-mail: jw@wsfirm.com

claire@wsfirm.com

wh@wsfirm.com

Attorneys for Plaintiff

**CELLULAR COMMUNICATIONS
EQUIPMENT LLC**

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document was filed electronically in compliance with Local Rule CV-5 on this 19th day of September, 2016. As of this date all counsel of record have consented to electronic service and are being served with a copy of this document through the Court's CM/ECF system under Local Rule CV-5(a)(3)(A).

/s/ Terry A. Saad